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Application Number	10/615,986
Filing Date	07/10/2003
First Named Inventor	Louis B. Rosenberg
Art Unit	2629
Examiner Name	Abdulselam, Abbas I.
Attorney Docket Number	IMMR-0099C (034701-433)

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Remarks

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Firm	Thelen Reid Brown Raysman & Steiner LLP		
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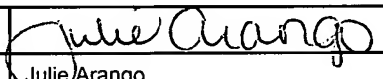
Signature			
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Louis B. Rosenberg et al.	CONFIRMATION NO.:	1236
SERIAL NO.:	10/615,986		
FILING DATE:	07/10/2003		
TITLE:	HAPTIC FEEDBACK FOR TOUCHPADS AND OTHER TOUCH CONTROLS		
EXAMINER:	Abdulselam, Abbas I.		
ART UNIT:	2629		

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APPEAL BRIEF

Dear Sir:

This paper is in support of a Notice to Appeal filed on March 9, 2007, of the Final Office Action dated December 19, 2006, to the Board of Patent Appeals and Interferences.

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Table of Contents

Real Party in Interest

Immersion Corporation.

Related Appeals and Interferences

None.

Status of Claims

Claims 1-64 have been canceled.

Claims 65-71 have been finally rejected and are on appeal.

Status of Amendments

No amendments after final have been filed.

Summary of Claimed Subject Matter

The invention relates to haptic feedback devices. These devices are intended to provide an additional dimension to a user's interaction with an objection. In particular, a haptic feedback device is designed to provide a tactile force to the user, which may be in response to an action taken by the user, such as a press of a button or a manipulation of a joystick, or it may be in response to a pre-programmed event, such as when an object on a computer screen moves in a certain manner or interacts with another object. By providing haptic feedback that the user can feel, the user's experience with the device is enhanced, in the same manner that accompanying sounds and/or visual effects can enhance that experience.

One example of a haptic feedback device is a touch pad 16, shown as being a part of a laptop computer 10 in FIG. 1, and as a part of a handheld remote control 30 in FIG. 2. To provide haptic feedback, the touch pad 16 is coupled to piezoelectric actuators 42 on a back side thereof, as FIG. 3 illustrates. (A discussion of the FIG. 3 embodiment begins on page 10, line 29.) The actuators 42 impart a physical force to the touch pad 16 in response to signals they receive from a processor, which may be a dedicated processor or the processor of the host device—that is, the laptop 10 in the FIG. 1 example. The physical force from the actuators 42 may be a vibration, an abrupt jolt or the like, or similar forces or combinations of forces depending on the type of sensation desired.

Another example of a haptic device is a touch screen 82, show in FIGS. 8a and 8b as part of a PDA (personal digital assistant) 80. Similar to a touch pad, which is intended primarily to sense user inputs provided by the user's finger or stylus, a touch screen is additionally designed to display graphical images on the surface being contacted. Typically, the haptic effects are made to be a function of the location of the touch screen that is contacted. As an example, the touch screen may display a pushbutton in a corner thereof. When that pushbutton is contacted by the user, a haptic effect is generated, enhancing the user's awareness of the interaction with the pushbutton. The touch screen 82 of FIGS. 8a and 8b is provided with actuators 86 which are arranged to provide the haptic effects to the user.

Claim 65 is directed to an apparatus (80 in FIGS. 8a, 8b) comprising a housing 88, a touch screen (82) having a contact surface supported by the housing, and a sensor (described for example on page 21, lines 18-20) configured to generate a first signal based on an interaction with the contact surface. The apparatus also comprises a first piezoelectric actuator 86 directly coupled to the touch screen 82, the first piezoelectric actuator being configured to output a haptic force to the touch screen in response to the first signal.

Grounds of Rejection to be Reviewed on Appeal

Whether Claims 65-71 are unpatentable under 35 U.S.C. 103(a) over U.S. Pat. No. Fujita et al. (U.S. Pat. No. 6,118,435 hereinafter, Fujita).

Argument

Claims 65-71

Claim 65, from which the remaining claims depend, recites, *inter alia*, "a first piezoelectric actuator *directly* coupled to the touch screen." (Emphasis added). This feature is not disclosed in Fujita. Rather, Fujita shows the driving portion 5 coupled to touch panel 3 by way of support plate 4 and press detection switch 6, which are disposed between the driving portion and the touch panel. There is no direct coupling of an actuator to a touch screen in Fujita.

The Office Action of July 19, 2006, acknowledges this deficiency, but alleges that direct coupling would have been obvious to one of ordinary skill in the art because Fujita states that "the driving portion 5 may be at only one place or at more than one places (sic) *on the peripheral portion* of touch panel 3." (Col. 5, ll. 56-58, emphasis added). Applicant respectfully disagrees that this, or any other passage in Fujita, renders direct coupling obvious. The emphasized language above clearly indicates that Fujita is referring to peripheral portions of the touch panel 3 when describing possible alternate or additional locations for the driving portion 5. This is particularly evident when FIG. 1 of Fujita is taken into account, which shows multiple locations of driving portion 5, *all of which involve indirect coupling to touch panel 3*.

The Office Action then cites *In re Japikse*, 86, USPQ 70 CCPA (1950), and alleges that the claimed direct coupling is insignificant in the same manner as shifting the location of a part to a different position would be. Applicant again respectively disagrees. Is the difference between a front wheel-drive vehicle (direct coupling) and a rear wheel-drive vehicle that uses a long, heavy, transversely-mounted drive shaft to couple the engine to the rear wheels (indirect coupling) insignificant? Applicant respectfully submits that similarly equating direct versus indirect coupling in a haptic feedback device with a mere shift of a location of a part is an oversimplification that overlooks many significant distinctions, such as compactness, robustness, force damping, friction, attachment issues, and so forth.

It will be appreciated that, in order to establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure.[1]

In the instant case, there is no suggestion in Fujita to use direct coupling, as the above discussion makes clear, and there is no motivation to modify Fujita to achieve the claimed direct coupling. Applicant respectfully submits that any allegation to the contrary is impermissibly grounded in hindsight gleaned from familiarity with applicant's own disclosure. Accordingly, withdrawal of the obviousness rejection based on Fujita is urged.

[1] M.P.E.P § 2143.

Claims Appendix

65. An apparatus, comprising:

a housing;

a touch screen having a contact surface and supported by the housing;

a sensor configured to generate a first signal based on an interaction with the contact surface; and

a first piezoelectric actuator directly coupled to the touch screen, the first piezoelectric actuator configured to output a haptic force to the touch screen in response to the first signal.

66. The apparatus of claim 65, further comprising:

a second piezoelectric actuator directly coupled to the touch screen and configured to output a haptic force to the touch screen in response to a second signal generated by sensor.

67. The apparatus of claim 65, wherein the touch screen is configured to display a graphical user interface including an icon, the first signal being a function of the position of the interaction with the touch screen relative to the icon.

68. The apparatus of claim 65, further comprising:

a button having a button function, wherein the display screen is configured to display a graphical user interface including an icon associated with the button function, the piezoelectric actuator being configured to output the haptic force in confirmation of a selection of the button function.

69. The apparatus of claim 65, wherein the touch screen is configured to display a graphical object with which the haptic force is uniquely associated.

70. The apparatus of claim 65, further comprising:

a processor in communication with the sensor and the piezoelectric actuator, the processor being disposed within the housing, the processor configured to provide a second signal to the piezoelectric actuator based on the first signal; and

a physical button disposed within the housing and in communication with the processor.

71. The apparatus of claim 66, further comprising:

at least a first compliant member configured to movably support the touch screen relative to the housing.

Evidence Appendix

None.

Related Proceedings Appendix

None.

Please charge any additional required fee or credit any overpayment not otherwise paid or credited to our deposit account No. 50-1698.

Respectfully submitted,
THELEN REID BROWN RAYSMAN & STEINER , LLP

Dated: 05/07/2007

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